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THE SOURCE EVALUATIONS IN THIS REPORT ARE DEFINITIVE.
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(FOR KEY SEE REVERSE)

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SECRET

STATE	#x	ARMY	#x	NAVY	#x	AIR	#x	FBI		AEC		OIT	x		

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A. General Economic Effect of Embargo on Satellite Countries

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the effect of any embargo is to force the country against which the embargo is made toward self-sufficiency. The most serious effects of an embargo are felt immediately after it is put into effect; from that point on the embargo loses its effectiveness progressively as the country gains in self-sufficiency. For this reason, the blockade of the East is progressively losing some of its effectiveness. Another reason for its reduced effectiveness is the lack of the possibility of trade control. Embargoed materials are coming into Hungary

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The West's embargo certainly has had a great effect on Satellite plan fulfillment

The most serious bottleneck in production has been caused by the shortage of machine tools and copper. Prior to the war, Hungary had to obtain most of her machine tools from western countries. When this and other sources were cut off, she was forced to start producing her own machine tools at the MAVAG Plant. (See Encl (P)7. Although the acute shortage has thus been alleviated, the supply of machine tools is still not sufficient. Machine tools have been imported from the USSR; these were in sample quantities and for show purposes only

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it is very difficult for Hungary to obtain centrifuges for its insulin and penicillin plants

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Some centrifuges have been obtained from Czechoslovakia but these were of poor quality.

The embargo on copper has created very serious difficulties in the electrical industry. Some industrial operations have actually come to a standstill. An example is the partial halting of construction work at the Gigant plant in Czechoslovakia

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. The copper shortage is still acute, but has been partially alleviated. the additional copper is coming from the East Zone of Germany, the USSR,

There is an even greater shortage in lead than in copper. A 400-volt underground cable was recently laid with only plastic and bitumin covering to make it waterproof because there is no lead available in Hungary. Nonferrous metals, such as molybdenum, nickel, cobalt and chromium are extremely critical in Hungary; however, there seems to be a sufficient supply to keep the steel industry operating. this supply comes from, China. In addition to raw materials and finished products, there is a great shortage of designers in certain fields and a great need for plans and

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designs for machines and plants. Specifically, Hungary could use plans for:

A 10-thousand-kw electric furnace for the production of ferro-silicon

A steel plant

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A rolling mill

knowledge concerning Satellite methods of getting around the embargo. all transactions of importance are carried out through Rumania and Poland. 25X1 25X1 glass buying commission which resides in Prague, Czechoslovakia. This commission consists of four or five people and its ostensible purpose is to buy glass from Czechoslovakia this is merely 25X1 a cover for large-scale illegal trading operations.

In a tremendous land area, such as the combination of the USSR and China, the statistical chances of the lack of certain raw materials are practically nil. the area, 25X1 particularly China, is potentially richer than the well-exploited North American continent; the area is potentially self-sufficient and it is only a matter of time. Nevertheless, all metals such as copper, nickel, molybdenum, vanadium, cobalt and tungsten should be embargoed.

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Technical and design talent is more difficult to obtain in the USSR and its Satellites than in the West. Scientists and designers are afraid to come out with new ideas, because if a new idea fails to develop satisfactorily, its originator can be convicted of sabotage. Most important to be kept from the Satellites are plans for new machines and industrial plants. New machines, particularly automatic machines for high-speed production, should be embargoed, for even if only one machine is obtained by the Soviets, they have the talent to copy it and put it into production; the original design talent is lacking at the present time.

the embargo list 25X1 in general, it covers most of the vital items which should be embargoed. it is too long and too detailed, however. 25X1 The simpler and more all-inclusive the list, the more effective it is. Every added detail weakens the list by 25X1 suggesting a route of evasion. To give an over-simplified example, if all export of copper in any form were stopped, there could be no legal way in which electrical power equipment could be exported. embargo list forbids the export of electric motors over 25X1 one thousand hp; it would be very difficult even for a qualified engineer to determine the horsepower rating of the motor by looking at it. Anyone who wanted to ship a motor over one thousand hp could change the identification plates or, better still, ship the motor in sections. The sections would be packaged and control would be impossible. Further examples of instances

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Where too much detail and too many exceptions make the embargo ineffective are as follows:

"Honing and/or lapping machines (except gear)." This tells the exporter that all he has to do is say that the machine is for gear honing and lapping and it can be exported; control is impossible especially if the machine is shipped in sections.

"Diesel engines, marine types, of 1500 hp or over, with rotary speed of 200 rpm or over" and "diesel engines, all types, with the following characteristics:

200 to 300 hp with rotary speed of one thousand rpm or over

300 to 800 hp with rotary speed of 600 rpm or over

over 800 hp with rotary speed of 400 rpm or over."

Can, for instance, a one-thousand-hp engine with 399 rpm be exported, or a 799-hp engine with one thousand rpm? How can this be controlled by looking at the engine? Even 25X1
if the company is willing to put it on a test stand, the company could make a rig to prove anything they wanted to prove. The only effective control would be to forbid export of all diesel engines.

"Location apparatus, under-water apparatus for detecting or locating objects under water (excluding specific civil items, eg. apparatus for detecting shoals of fish)". how can one prove that a 25X1
sonar set is not for detecting shoals of fish?

"Electrometers (except student type). Obviously all electrometers exported will be of the "student type".

"Alloys containing 3.25% to 5% silicon." Are alloys of 3% and 5.5% Si all right?

"Water-tube boilers, 80 thousand pound-hours (36,300 kilo-hours) steaming capacity and above (excluding marine boilers)." If a minimum figure is to be specified at all, the figure should be specified in maximum pressure. The capacity figure is nearly impossible to control, particularly if the boiler is shipped in sections.

placing an embargo on the following items which are in very short supply in the Satellites 25X1

The primary export item which should be stopped is the flow of scientific information from West to East.

Small capacity compressors which can be used in the transportation industry, construction industry (driving pneumatic equipment for fast construction of airfields, for instance) etc.

Concrete mixers.

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Paving brick machines, clay digging machines, automatic saws, land bagging machines, bulldozers, pipe ditch digging machines, and other automatic equipment for fast construction work.

Cable-laying machines 25X1 in Czechoslovakia.

Ferrochrome and ferromanganese.

Polyvinylchloride.

Anthracite.

Rubber and other organic (Palmetto) and inorganic packing materials. Construction work in Hungary has been halted several times because of the lack of packing and sealing materials.

All electric power generating equipment.

the following list of exports to East Germany:

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Food; eg, Hungarian butter wrapped in Soviet paper to convey the impression to the East Germans that they are getting Soviet goods.

Bauxite.

Alumina.

In turn, East Germany's exports to Hungary are:

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Machine Tools (Krupp - Grusbn).

Optical equipment from Zeiss.

BMW automobiles; during one particular month a shipment of 500 came to Hungary.

Ferrosilicon.

The published statements of percentage of plan fulfillment depend on the political and economic situation at the particular moment. In general, the published production figures for consumer goods such as textiles, shoes, household appliances, etc, are higher than the actual figures. This is to boost the morale of the population, and to serve as peace propaganda. In general, published production figures for raw materials and industrial items are below the actual figures in order to chastise plant employees so that they can be pushed to produce more. For instance, in the Fall of 1951, the published coal production figures were under the actual figures because of the serious lag in coal production and the desire of the government to push coal production.

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Individual plant managers do not dare falsify production figures to the Government. They are controlled very closely. Three or four espionage organizations may exist in one plant without anyone organization knowing of the others' existence. The plant managers are familiar with this situation and they would rather put out a product of poor quality than have reduced production.

Economic bottlenecks in other Satellite countries are very similar to those in Hungary 25X1

Electric Power Plants of Hungary and Satellites

The Inota power plant was originally planned to be 140 thousand kw. this may be reduced, but it 25X1 will be to a multiple of 20 thousand, between 80 and 140 thousand kw because the generators are 20 thousand kw. The capacity will be either 80, 100, 120, or 140 thousand kw. The turbines are built by Skoda and are of the standard, mixed-type. The principal user of the electricity from the plant will be the Trans-Danubian power grid, which is intended primarily for the aluminum industry. The remainder of the power will go to Budapest. It is not intended for the steel works at Dunapentele. Since the power plant was originally planned by Czechoslovakia for Yugoslavia, the pressure is not one that is normally used in Hungary; it would be wiser for 25X1 Hungary to expand the modern Tokay plant rather than develop the Inota plant.

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Satellite Power Plants:

Location	Power	No Boilers	Type	Remarks
Czechoslovakia				
Bratislava				
Komarno	14,000 KW	8	Skoda	
near Mosti, 2 plants	200,000 KW total			
Ostrava	200,000 KW min			
Plzen	100,000 KW			
Praha				
3-4 old type small plants				
East Berlin				
Kraftwerk "West"				
Klingenberg				
Rumania				
Petrosa				

Industry - Miscellaneous 25X1

Cement Plants

The operating efficiency of the Hungarian cement plants is extremely high. All of the machinery is operating at top capacity all the time, with an efficiency of about 100 per cent. Total production of the cement plant is four thousand metric tons per day

Explosives and Ammunition

The initial capacity of the Borsod nitrogen plant will be 400 metric tons of N_2 per day, twice the capacity of the Pet plant. the plant can be expanded threefold. The yearly capacity at Borsod for N_2, based on a norm of 400 tons per day, would be 146 thousand metric tons N2. Synthetic ammonia is produced at Borsod, Pet and the Hungarian Chemical Plants. Note: the total Hungarian production goal is 600 tons of N_2 per day and that only 35 per cent of this is produced today. 25X1

The plant is being built on four or five terraces above ground, although parts of it may be built underground. 25X1 one and one-half million cubic meters of earth were moved for the foundation of the plant. According to Hungarian building practice, if this figure is divided by three, the approximate area of the plant can be obtained.

the amount of ferrosilicon produced yearly. six thousand KW per year were necessary for the production of 45 to 90 per cent pure ferrosilicon. The ferro-

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silicon produced is of standard good quality. There are two ferrosilicon plants in Hungary, one at Tatabanya and the other near Salgotarjan. /Zagyvarona, Vizvalaszto Telep; see Encl (M)7. Each plant has a 3,500 kv - ampere three-phase Siemens furnace. There are no plans for the expansion of either plant. Quartzite is obtained from Kovagoörs /See Encl (L)7.

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Hungary would like to quadruple its ferrosilicon production; therefore, it apparently does not have all of the ferrosilicon it needs. If plans for expansion of the ferrosilicon industry materialize, the supply should be equal to steel mill requirements in approximately three years. The Hungarians are in need of a plan for a steel plant which they may get through Germany. Some ferrosilicon is at present being imported from East Germany and Czechoslovakia. The Hungarians have sufficient raw material available to produce enough ferrosilicon to meet their own requirements. Hungarian plant facilities are not adequate to process the raw materials, however. At present, there is a plan to build a new ferrosilicon plant either near Esztergom or Vac. The Hungarians would have liked to build a 7,500 to 10 thousand kv - ampere furnace for this installation; no plans were available, however. They will probably build six 3,500 kv -ampere furnaces, instead.

Present plans for the capacity of the plant are flexible. they may have progressed as far as construction contracting.

information on other industries7;

Cable Plants: The Felten Guilleaume, Kabelgyar and Siemens cable plants in Budapest /See Enclosures (N) and (Q)7 are now all under one management. They are the only cable plants in Hungary.

the Felten Guilleaume plant uses six to seven thousand tons of copper and aluminum per year. The manager of the plant is Chatel (fnu).

Hungarian Chemical Plant, Budapest: The plant has been reconstructed and has resumed its prewar production, sulphuric acid, chlorine, ammonia, nitric acid, etc. To date, it is the only sulphuric acid producer in Hungary; however, a new sulphuric acid plant is planned at Martfu (near Szolnok) on the bank of the Tisza river next to the Bata shoe plant. Stierling, Hungary's present sulphuric acid production expert, will become the manager of the new plant, which will cost 150 million forints or $12 million.

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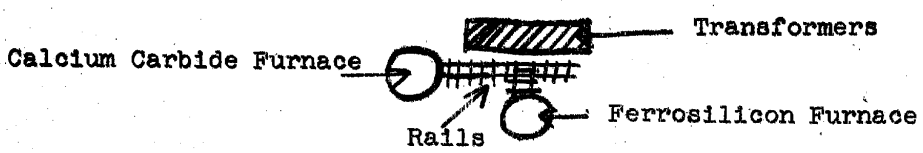
Calcium Carbide: Calcium carbide is produced at Tatabanya and Dorog. The calcium carbide furnace at Tatabanya is similar to the ferrosilicon furnace (3500 Kv -ampere, three-phase Siemens) and both can be used interchangeably with the existing transformer:



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Two carloads (20 tons) of calcium carbide per day can be produced at Tatabanya instead of ferrosilicon /sic/. Only six tons per day are produced at Dorog. No expansion of these plants is planned. A new plant will be built along the Danube between Esztergom and Vac which is to be similar to the planned ferro-silicon plant [redacted] The approximate capacity of the new plant will be 120 tons of calcium carbide per day. 25X1

Rubber: There are two rubber plants in Hungary.

Nagyteteny - produces natural and synthetic rubber. The plant experiments extensively with new production procedures. At the present, the Soviet method of obtaining rubber by the "Coxagis" process is being tried; 10 "hold" of land have been planted [redacted]. The Buna plant is making synthetic rubber from alcohol. The manager of the plant is Zoltan Solyom-Barna. 25X1 25X1

Budapest - the Rugyant Aru Gyar produces finished products, such as tires. [redacted]

Bauxite, Alumina, and Aluminum - Hungary

[redacted]

Twenty-two thousand tons of bauxite and eight thousand tons of alumina are going to East Germany from Hungary for abrasives production. There is a possibility that some of the bauxite and alumina is being used for aluminum production at Bitterfeld [redacted] the Soviets announced their yearly aluminum production as 300 thousand tons. [redacted] this figure to be far below actual production. [redacted] actual production to be 700 thousand tons per year.7

[redacted]

All bauxite shipments to the USSR go via rail to the border at Chop. There the bauxite is transloaded onto Soviet trains. [redacted] there are no boats or barges in Hungary capable of transporting bauxite. Bauxite cannot be transported in paper bags in ordinary barges since the paper bags could not withstand several transloadings. The construction of a barge landing at Almasfüzitö was started, but stopped by the Soviets. This is a good indication that there is no intention of shipping bauxite by barge. Shipment of bauxite by water is also difficult from the standpoint of getting the

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barges through the Yugoslav part of the Danube. The Soviets would not risk sponsoring the design and construction of special barges only to have Yugoslavia cut them off from the sea. At present, a new 40-ton tank car is being built to transport bauxite without having to pack it in paper bags. The bauxite will be loaded pneumatically by hose. This tank car will be used to ship bauxite and alumina to planned Czechoslovak and Polish installations. The tank car could also be used for oil. The bauxite which is at present going to the Soviet border at Chop, is being shipped in paper bags in any type of railroad car. The trains try to approach a goal of 500 km per day. This goal is occasionally reached.

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The Danube is sometimes frozen over from the middle of December to the end of February, in which case barges do not operate.

	1948	1949	1950
Aluminum, tons/year	16,000	18,000	22,000
Alumina, tons/year	50,000	60,000	90,000

Only sheet aluminum is being exported from Hungary to the USSR. Sheet aluminum has been exported to the USSR for the last three years.

When secondary aluminum was available in Hungary, it was high in iron content, as is usual in secondary aluminum produced from airplane scrap. Small castings for non-critical uses were made from the secondary aluminum. No drawn products were made because of the high iron content. There is no longer any secondary aluminum in Hungary.

There is a shortage of caustic soda in Hungary which will be alleviated by a future Rumanian plant. There is no cryolite shortage.

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Caustic soda is produced by the electrolysis of salt at plants separate from the alumina plants. Neither soda ash, caustic soda or metallic /sic/ are produced in Hungary because Hungary has no sodium chloride (Na Cl) deposits. All of the above are obtained from Rumania and Czechoslovakia.

There is no particular shortage of cryolite. All of the cryolite is obtained from the Aussig Chemical Works in Czechoslovakia. [redacted] the entire Hungarian supply of cryolite came from the USSR and Czechoslovakia./

The sources of carbon are generally:

Petrol coke, from the Pet cracking plant; a relatively small amount of good quality

East Germany, very good quality [redacted]

Rumania, good quality

Soviet carbon of poor quality is supplied by Ajka in insufficient quantities

Poland: The Siemens Plania Plant near Ratibor produces carbon of fair quality

Ostrava in Czechoslovakia will produce 40 thousand tons per year of pitch coke by 1954.

The amount of carbon needed by the Hungarian aluminum industry can be figured as 60 per cent of the total amount of aluminum produced - that is, 15 thousand tons per year of carbon in the finished form.

Aluminum is used in cable production.

The use of aluminum in household utilities is not permitted.

Aluminum is used in the electrical industry.

Very little aluminum is used in the iron and steel industries.

No aluminum is used in the machine building, automobile and tractor industries.

An insignificant amount of aluminum is used in the chemical industry.

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Nearly all of the aluminum is eventually used in military materials, probably Soviet aircraft in the USSR. No aluminum is used for railroads. some 15-m long aluminum landing boats being constructed at a plant in Vac. Four or five were being built at the time. 25X1

An insignificant amount of aluminum is used in foil and for packaging. 25X1

Little or no aluminum is used in the chemical and food industries.

Aluminum sheet is exported to the USSR.

Construction

Aluminum is not used as a structural metal or building material. one occasion where a corrugated aluminum roof had been started but was stopped by the Soviets.

Of the total investment in new aluminum plants, what percentage is for installed equipment and what percentage is for building construction in Poland, Czechoslovakia and Hungary?

Approximately 60 per cent of the total investment is in equipment and 40 per cent in building construction.

Because of the strong fluctuations of all currencies, particularly Hungary's, between 1941 and 1951

1941 - 1942	No investment
1943	Tatabanya expanded (two thousand tons per year at a rough cost of two million dollars)
1944	Industry was bombed
1945 - 1947	Industry was dismantled
1948 - 1951	Industry was expanded to 11 thousand tons per year at a rough cost of $110 million.

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During this period there was no investment in the aluminum industry in Poland and Czechoslovakia.

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The labor requirements of the Hungarian alumina and aluminum industry are six to eight thousand workers, including administrative and clerical employees. Czechoslovakia will require five thousand people by 1954. Poland will require 1,500 people in their smelter and three thousand people in their rolling mill by 1954.

Buildings in the light metal industry generally have prefabricated concrete roofs and concrete floors. Windows are generally iron frames.

There is no construction cost index published for public use. There is one used by the State Planning Commission; this is a book of approximately 500 pages

Petroleum

Early in 1952, a petroleum discovery was reported in northeastern Hungary in the region of Borsod [4818N-2045E]. Exploratory drilling has been reported at Mezokovesd [4748N-2034E] and Mezokeresztes [4749N-2042E]. Results were reported to be satisfactory from these three areas.

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large oil field in this area

The wells in this area are two thousand to 2,500 m deep and are operated on "rock pressure".

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The light metals industry in Hungary has no petroleum requirements since almost all plants are electrically operated. In one particular instance, two rotary furnaces in an alumina plant were converted from using "Masut" (the thickest oil product) to using coal generator gas. The light metals industry apparently is not allowed to use petroleum for heating.

All petroleum products are in short supply; the most critical are high-octane gas and lubricating grease.

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there must be storage facilities at Hajmasker near Inota and in the Bakony Forest and that there is a stock-piling program.

there are additional storage areas in Varpalota, Pet, Fuzio.

Since all users of petroleum products are Government controlled, there is no set program to cut down on the use of petroleum. If the Government wants to cut the consumption at any particular plant, an order is merely given and a reduced amount of petroleum is allocated to that particular plant. Civilians are allotted 200 liters of gas per month for automobile use; however, this amount is only given to VIPs. In Czechoslovakia, civilian gasoline is controlled by the high price of the gas (50 crowns per liter) - no civilian can afford this price. If a civilian uses gasoline for Government purposes, he is given the specific amount of gasoline he needs for the specific mission.

Priorities probably exist Even if priorities were known, they could be changed at a moment's notice according to the whims of the ministers.

The approximate time to pump clear a 15-car train of oil is a half hour. The size of tank car trains averages from 50 to 80 cars (100 to 160 "wheels") of 10 metric tons' capacity each. Hungary has developed a new type of tank car which is now coming into service and which has a 14 to 15-ton capacity. This new car is constructed in such a way that the tank rests directly on the wheeled trucks, the flat bed base for the tank having been eliminated. The tank cars can be used equally well for the transportation of aluminum and petroleum.

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Practically all petroleum production in Hungary is transported by railroad. no truck transportation and no petroleum is carried on the waterways. One hundred per cent of bulk petroleum is moved on the railroads.

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Petroleum research laboratories which deal with refining and cracking problems exist at Pet and Veszprem. The output of finished petroleum products can be measured only in terms of annual production of oil coke, which is four thousand tons, in Hungary.

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Coal Industry, Hungary

Geology:

The greater part of Hungarian coal is from the Eocene period. Some of the coal, particularly near Pecs, is from the Oligocene period.

Location and names of mines:

/See Enclosures (B) through (J)/

Depths of shafts:

On the average, Hungarian shafts are 170 to 250 m deep. The shafts near Pecs are as deep as 300 to 350 m.

Extent of workings:

Reserves at Varpalota are two thousand tons per day for 200 years. Tatabanya has 80 - 100 million tons of reserves. The Borsod reserves are very extensive. Reserves at Salgotarjan are not as good as at Borsod.

Thickness of each seam mined (being worked):

Tatabanya - as much as 12 to 18 m.

Borsod - 2 to 3½ m
Pecs - multi-layer seams 1.2 to 2 m each

Analyses of the types of coal:

	Moisture	Sulphur	Ash Content	Heating Value
Tatabanya	12-14%	3-5%	8-10%	4,500-5,200 cal per kg
Borsod	25% max	5-6%	35% max	2,000 cal per kg min
Pecs	8-10%	1½% max	---	6,800 to 7,000 cal per kg
Salgotarjan - Good quality brown coal				Approx 4,800 cal per kg

Method of preparation:

Dry preparation is used at Tatabanya and Borsod. Wet preparation is used at Pecs with a Baum-type washer; this is a batch process. Manual classification is used.

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Destination of coal:

The coal mined in Hungary is used only in Hungary in industrial and power plants.

Quantities and types of equipment:

Condition of equipment: 25X1

The mining equipment is in poor condition because of over-use. All equipment is operated until it breaks down.

Number of employees:

Tatabanya has 11 thousand miners. The whole Hungarian coal industry has approximately 80 thousand employees, 35 thousand of whom are miners.

Since 1945, a goal of four thousand to 4,500 carloads per day has been set. This goal has been constant since 1945 and has been reached frequently. The worst results were in 1951 when only 70 per cent of this goal was reached. The normal production for the mines is as follows: (1 carload - 10 metric tons) 25X1

Location	Carloads per day	
Tatabanya	850	1000 cars per day
Pecs	500	200-300 cars per day
Borsod	1500	1200 cars per day
Varpalota	400	
Salgotarjan plus Dorog	600	

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There is very little Soviet technical influence in the Hungarian coal industry. The industry was well established when the Soviets came in, and few technical changes have been made. Soviet influence is felt only in the form of pressure for production. There is a considerable amount of Soviet propaganda to the effect that the Soviets are helping and influencing the Hungarian coal mining industry----this is only propaganda. The Soviets have sent five Donbass combines to Hungarian mines. These are not very original machines, however, and were sent for show purposes only. Approximately 20 people went to the USSR for a tour of Soviet coal mines. Some Hungarian mining students are attending Soviet universities. these people will learn much applicable information from Soviet mining practices, because mining conditions in the USSR are totally different from mining conditions in Hungary. 25X1

Soviet citizens serve only in the management of those plants in which the Soviets have an actual interest, for instance,

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Ajka. For those industries in which the Soviets do not have an actual interest there is an office which supervises the manufacturing of reparations for the USSR. This office is called Office for the Handling of Soviet Rights (Szovjet Javak Kezelosege). This is actually a series of offices located on Andrassy Street, Benczur Street and Bajza Street between Andrassy Street 60 to the Varosliget /in Budapest/. The Soviet personnel in these offices are replaced constantly. the names

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are probably cover names. Every half year, a Soviet Vice Secretary of State comes to these offices for a conference. The name of this man is Savinov.

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In the mining industry, the Soviets act mainly in an advisory capacity. In the aluminum and alumina plants where the Soviets have part interest, Soviets serve as technicians.

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one instance where a Soviet adviser was sent to a plant where the Soviets had no interest. This was the Magyarovar Alumina Plant. Soviet advisers in the aluminum industry are as follows:

Almasfüzitö	Bobkov, General Director
	Strenikov
Ajka	Jojchnikov
	Borisov

these are cover names.

The relationships are "good"; the Hungarians have no other choice. There is no basic understanding, however, between Soviets and Hungarians. Their personalities, habits, and even their clothing clash.

The Soviets have supplied only an insignificant amount of mining equipment to the Hungarians. This consisted of a few Donbass combines and a few pneumatic drills. The pneumatic drills supplied were only a sample number.

The equipment functions in a normal, satisfactory manner.

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Hungary received pneumatic hammers and hulking hammers from Czechoslovakia, but only an insignificant number. Hungary did not receive equipment from any other Satellite country except Austria.

The amount of USSR and Satellite equipment is too small to necessitate shipments of spare parts. Any orders placed in the USSR for mining equipment or spare parts are not filled.

Hungary is not dependent on imported equipment; she has been forced to become independent.

Hungary did not receive much coal mining equipment during the war. Since Hungary needed machine tools more than she did mining equipment, she traded foodstuffs 25X1 machine tools. Hungary did, however, receive some hulking hammers and drilling machines. The drilling machines came in lots of several hundred.

There are generally two mining methods in Hungary - the long wall method and the front method (Front Fejtes). Most of the mining is done by the latter method because the majority of the seams in Hungary are very wide. The Donbass combines can be used for either type of mining; if more such combines were available they could be used in nearly all the Hungarian mines.

The Hungarians do not plan to build the Donbass combine; only the Ajtay combine will be built in Hungary.

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The majority of the Hungarian mining equipment consists of Flottman hammers, Mauhinko hammers, Little David (Ingersoll) drills (used at Tatabanya). This equipment can not be replaced as it was all imported. An attempt is being made to keep it operating by manufacturing new spare parts; considerable trouble is being experienced, however, in the polishing of drills and obtaining ball-bearings. Hungary is also trying to manufacture its own mining equipment by copying these known designs. The mining equipment plants are as follows:

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Bamert (Banya Gepek Es Mekanikusi Szallito Berendezesek Rt) located in Ujpest. This is a small plant and can be located through a Budapest telephone book. The plant has 1500 employees including administrative and clerical help. It manufactures hauling machines, eg shaft hauling machines, and endless rope hauling machines.

Hofher-Schrantz plant (Kuhne Plant) Budapest. /See Encl (Q)/. The manager and technical expert is Janos Korbuly. This plant does not manufacture mining equipment exclusively as does Bamert. Only small drill parts and small machine parts are made here. This plant will manufacture the Ajtay combines; the first order for Ajtay combines calls for 200.

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Magyar Fogaskerek Gyar, the Hungarian cog wheel plant, on Kistemplom Street, Budapest, manufactures parts for mining machines. It does not make complete machines and all of the production is not for mining machines.

The Ganz and the Lang plants in Budapest manufacture compressors. /See Encl (P)/

Since hardly any locomotives are used underground, few locomotives are manufactured in Hungary for use in mines. The depth of Hungarian coal mines is 200 m; it is therefore cheaper to sink shafts. The only mine which does use locomotives is at Tokod (near Dorog). Locomotives may be used in the future at Pecs. Locomotives are manufactured at the Allami Gepgyar, Vaci Street (ut), Budapest.

25X1

The only cutting machines Hungary is producing today are Ajtay Combines.

25X1

[redacted]

[redacted] the Ajtay combine is a technical fiasco. There are two types of Ajtay combines being made, large and small. The larger combine can make a 1½ m deep cut. [redacted] 25X1
Not even the Hungarians know what the combine should do. The chief limitations of the combine are as follows:

Strong vibrations - the machine is too delicately constructed to withstand the rough operating conditions.

The machine is too complicated. There are too many parts which can cause failure of operation. The machine has broken down after as little as 36 hours of operation. 25X1

The machine is not protected against coal dust.

The cutter is a "rose miller" (rozsa maro). This type of cutter makes only point contact with the coal, whereas a Sullivan cutter cuts along a line and is therefore more efficient. [redacted] the Ajtay combine will set 25X1
the Hungarian mining equipment industry back several years. Both the Donbass combine and the Eickhoff [redacted] combine are much better.

[redacted]

There are no particular objections to the use of Soviet pneumatic hammers. They are very primitive, simple machines and are easily repaired. [redacted] 25X1

Prior to the economic blockade of Hungary, the Hungarian coal mining industry used Flottman type B and D hammers. As these are no longer available, the Hungarian mining equipment industry is building copies. The hammers weigh approximately 9½ kg. There are weekly inspections. The Hungarian copies of the [redacted] 25X1
hammers are not as good as the originals. The lack of previous standardization of equipment is being felt in Hungary today. Spare parts have to be made for various types of equipment; there is, therefore, a considerable shortage of spare parts. Some mines have to make their own spare parts; other spare parts are made at the plants mentioned above.

[redacted] 25X1

At the end of the war, the Hungarian coal mines were in poor condition. Very few new shafts were sunk during the war. The machines were overworked. There is no great difference between the present-day condition of the mines and their condition at the end of the war. There has been no time to improve conditions because of the great pressure for production. The condition of the equipment is very poor and in many ways worse than at the end of the war. Again, the reason for this is the pressure for production and the use of machines until they break down. Personnel safety in the mines has decreased since the end of the war. People do not dare to hold up production for safety reasons since they may be convicted of sabotage. An example of this is the Tatabanya catastrophe

25X1

25X1

Many social benefits are promised the miners and a serious, but so far unsuccessful, attempt is being made to live up to the promises. 25X1

When spare parts are not available, work goes on by hand.

Prior to Soviet domination, Hungary was completely dependent on Germany for machinery and technical help in the coal mining industry. With this source cut off, the equipment situation is very difficult. Replacements can sometimes be obtained and at other times not. Since Hungary has no ball bearing industry, all ball bearings have to be imported

Occasionally, bearings of very poor quality are obtained from the USSR.

The replacement situation is more difficult now than it was during the war. At that time there was good cooperation with German industry, from which the original equipment was obtained.

The workers have to give good attention to the care of their machines; otherwise they are subject to strict disciplinary measures and can be convicted of sabotage. The machinery is lubricated; the quality of the lubricants is not good, however.

All of the locomotives used are electric (at Tokod); there are no compressed air type locomotives. The locomotives are built for 600 mm track. Nine kg and 12 kg rails are used both in the main entry haulage and in working places. Pneumatic locomotives have an advantage over electric locomotives in mines where there is danger of gas explosions. Electric locomotives are more economical but cannot be used in places where there is danger of gas explosion. At Tokod, there is no mine gas; therefore, electric locomotives are used.

25X1

The tendency to use more electrical than compressed air equipment is evident in the Hungarian coal mining industry. No progress can be made in this direction, however, because there are no research stations where electrical equipment can be developed. All compressed air lines operate at a pressure of seven atmospheres. The lines from the compressor are generally 10 inches in diameter. At Tatabanya, there are three central steam compressors with a total air inlet of 40 thousand m^3. Two of the compressors are 10 thousand m^3 and one compressor is 20 thousand m^3. Pecs, Salgotarjan and more recently Tatabanya have electrically-driven compressors. Air lines are not maintained too well because the quality of the packing materials is poor. An average life can not be stated easily because of varying conditions; however, it can be said that where there is little ground shifting, the lines last a longer time.

The thick Hungarian seams are easily adapted for manual working with the assistance of auxiliary tools such as hammers and drills. Thick seams are also worked by "Front Fejtes"; electric undercutters are used. The Pecs mine is the only mine where the long wall method is used. The seams here are worked manually without cutters.

Fifteen per cent maximum of the coal in underground mines is produced with electric cutting machines. Eighty-five per cent of the coal in underground mines is produced by pneumatic hammers and blasting from the solid; these two methods cannot be separated.

All the electric cutting machines used are Ajtay combines; these are used for loading as well. The combines are in use at Tatabanya, Pecs, and Dorog. Rubber belts are also used for loading into 640 kg cars.

Room and pillar mining is popular in Hungary because this method does not require machines. The true long wall method can be used for thin seams only, of which nearly none exist in Hungary. Further, there does not seem to be any great economic advantage in long wall mining; machines and more highly skilled labor are needed which are not easily available. Ten per cent of the mines in Hungary are of the room and pillar type (Tatabanya and Salgotarjan).

25X1

The retreat system (Omlasztasos Fejtes) is used in the Matra and Borsod mines.

Back-filling is used at Tatabanya and Salgotarjan. At Borsod and Pecs it is not necessary.

The 60-m wide seam at Tatabanya makes back-filling absolutely necessary. At Salgotarjan it is not as important, but still necessary.

Regulations on back-filling are made by each individual mine. Except for the fact that back-filling is required at the above-mentioned mines

Liquid filling is used almost exclusively; 40 per cent sand with water is brought in through pipes. Dry filling was tried pneumatically with slag and fly ash [sic] this was not successful, however.

Roof control methods are very primitive. Simple measurements are made to determine how much the roof has sagged.

Caving is used at Borsod. It was tried at Tatabanya but not found worthwhile.

Mine gas is not a serious problem in Hungarian coal mines. There are no mines with continuous gas sources. At the Pecs mines, there is a coal dust explosion hazard.

Thirty per cent of the Hungarian mines tend to have gas.

Safety lamps are used at Tatabanya, Dorog, and Salgotarjan, although there is no official gas hazard. Open flames can be used at the Tokod and Borsod mines. Electric lamps have recently replaced gas safety lamps. A few higher ranking miners have the electric safety lamps, which consist of an open electric filament sensitive to the presence of gas. The filament has a different glow when gas is present, probably because small amounts of gas burn around the filament.

There are a series of volumes written on mine safety laws. The principal provisions concern personal safety and back-filling. Previously, women were not permitted to work underground; this has changed, however.

25X1

management is pressed for production and the price of safety is both time and money, the safety of the mines has a tendency to go down. Yet a worker can be fined three days' pay per month, jailed or suspended for a safety law violation.

Small-scale cave-ins are very frequent. There are also a considerable number of small accidents resulting in personal injury which occur in the handling of machines and equipment. A large-scale cave-in occurred early in 1950 at the Petofi mine near Gyöngyös. The cave-in was the result of a desire to save wood in the construction of shaft supports. The construction was not strong enough and the shaft caved in killing three or four people. The great loss in this cave-in was a material one rather than a loss of lives. The mine was closed for some time afterwards and production was cut. The managers of the mine were jailed.

The history of the Tatabanya catastrophe is as follows: The foreman on the Saturday morning shift in shaft 12 noticed a slight gas leak, which he reported to the management. Normally, in such a case, the whole coal field would have had to be vacated. But because the final production figures are tallied and are reported in the coal production competition on Saturdays, the management did not dare stop production for fear of losing the contest. The gas leak worsened as the day wore on. Since production was to stop at 0600 Sunday morning and the mine aired out, mining and blasting continued in spite of the gas. At 2300, one of the blasts set off all the methane in the mine. One hundred and sixty people were killed in the accident. The manager was jailed for 15 years and two engineers were jailed for eight years each.

Spontaneous combustion is not a common hazard. Some hazard exists at Salgotarjan and Tatabanya.

Nine hundred and fifty fatal accidents occurred in 1950; there were a few less in 1951.

There is a definite rise in accident rates under the Communist regime

25X1

25X1

There was no sabotage in the mines during World War II.

there is no strip mine or baggering /sic/ in Hungary. Tatabanya produces 80 cars per day by strip mining.

The only mine opened by vertical shaft has been at Pecs. Because of the great depth, both personnel and materials are moved vertically. At Tatabanya and Salgotarjan, where the seam depth is only 80 to 200 m, and at Borsod, where the seam depth is 70 to 80 m, the personnel are moved in vertical shafts, the materials through inclined shafts. The air comes in through the inclined shafts and goes out through the vertical shafts. At Tokod, there is one horizontal shaft.

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25X1

Countries where only low-quality coals exist have the tendency to call a normally low-grade coal a somewhat higher grade coal; therefore, the Hungarian brown coal is really closer to lignite by normal standards and Hungarian lignite is really closer to peat by normal standards. In Hungary, the boundary line between brown coal and lignite is a heat value of approximately 2,500 cal per kg. When lignite is visually of a wooden structure and should be called peat it is still called lignite. The German lignite compares with Hungarian brown coal.

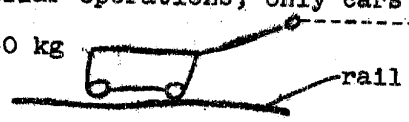
25X1

Brown coal is rated higher than lignite in the USSR, Germany, and the United States, as well as in Hungary and Bulgaria. The reason why brown coals in the USSR, Germany, and Hungary are rated higher than lignite in Hungary is explained

There is no mining of coal in open cuts for all practical purposes.

In room and pillar operations, only cars are used.

Capacity 640 kg



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There is very little use of belt conveyors.

requirement figures for conveyor belts, because of the lack of rubber, an attempt is being made to reduce the use of conveyors.

At present, there are 80 thousand employees.

productivity in the mines has been low. The primary reason is the lack of mechanization in the mines; a secondary reason is the lack of labor.

Natural conditions are in no way responsible for the low production. Natural conditions are better than in other European coal mines.

the poor working conditions and the poor provisions made for the miners, it is difficult to get labor for the mines. The poor provisions are also 25X1 responsible for the great degree of absenteeism. The miners generally have a second source of income and food from their vegetable gardens and small farms. The Government is trying to keep the miners from having a second occupation as farmers.

There is no forced labor in underground mines. Youths and women are allowed to work in mines but they are not forced to.

Approximate wage scales are as follows:

unskilled laborers	600 forints per month
operators	1200 forints per month
engineers at the mine	2000 to 2500 forints per month
engineers at the home office	3000 forints per month maximum

This is considered a very high salary.

25X1

After a year or multiples thereof, the miners get a bonus (hűség bér). After five years, they get a bonus of as much as a half year's pay. Medals are also given out.

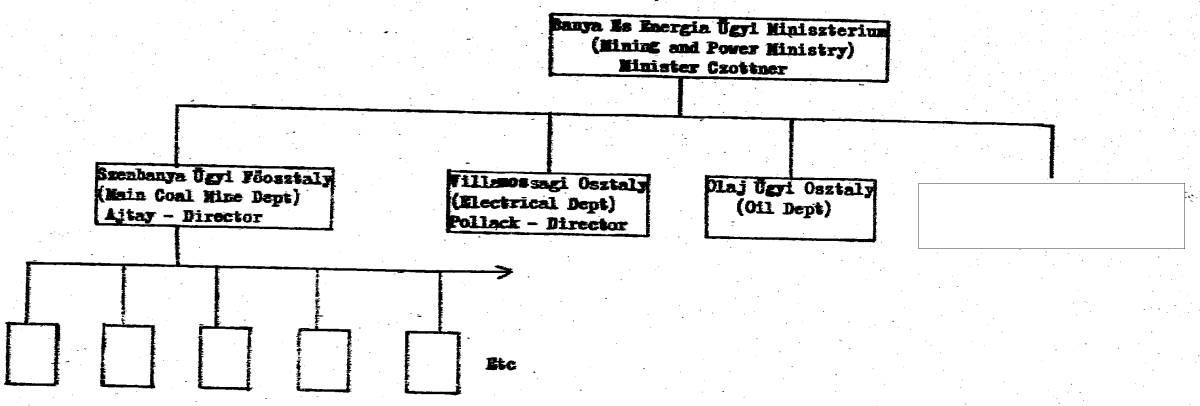
25X1

Coal miners are not given special rations; they can buy food 20 per cent more cheaply, however.

-end-

Enclosures A: Organization Chart of the Hungarian Coal Industry
Drawings of the following:
B: NW Transdanubia Coal Fields
C: Pecs Coal Fields
D: Borsod Coal Field - South
E: Borsod Coal Field - North
F: Varpalota & Dudar Coal Fields
G: Coal Fields - Transdanubia
H: Tata Coal Fields
I: Salgotarjan Coal Fields
J: Brennberg Coal Fields
K: Explosives Plants - Transdanubia
L: Quartzite Fields near Kővágoőrs
M: Zagyvarona Ferro-Alloy Plant
N: Cable Plants - Budapest
O: Military Installations - Budapest
P: Central Budapest
Q: Southeast Budapest Industrial Plants

Enclosure



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Individual mines are all in a horizontal organization in order to increase competition between mines and thus increase production. The results of the competition are published daily in the newspaper Szabad Nep.

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Organization Chart, Hungarian Coal Ministry

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Enclosure B SECRET/SECURITY INFORMATION

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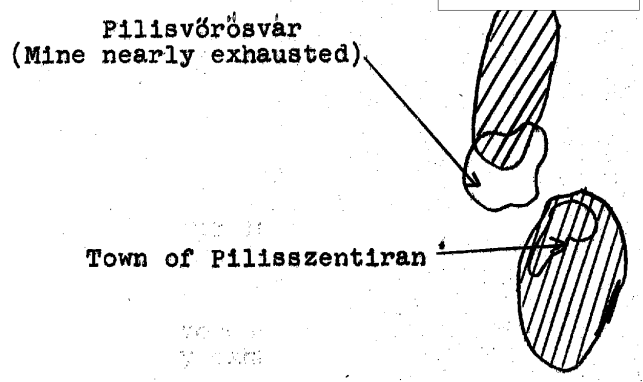

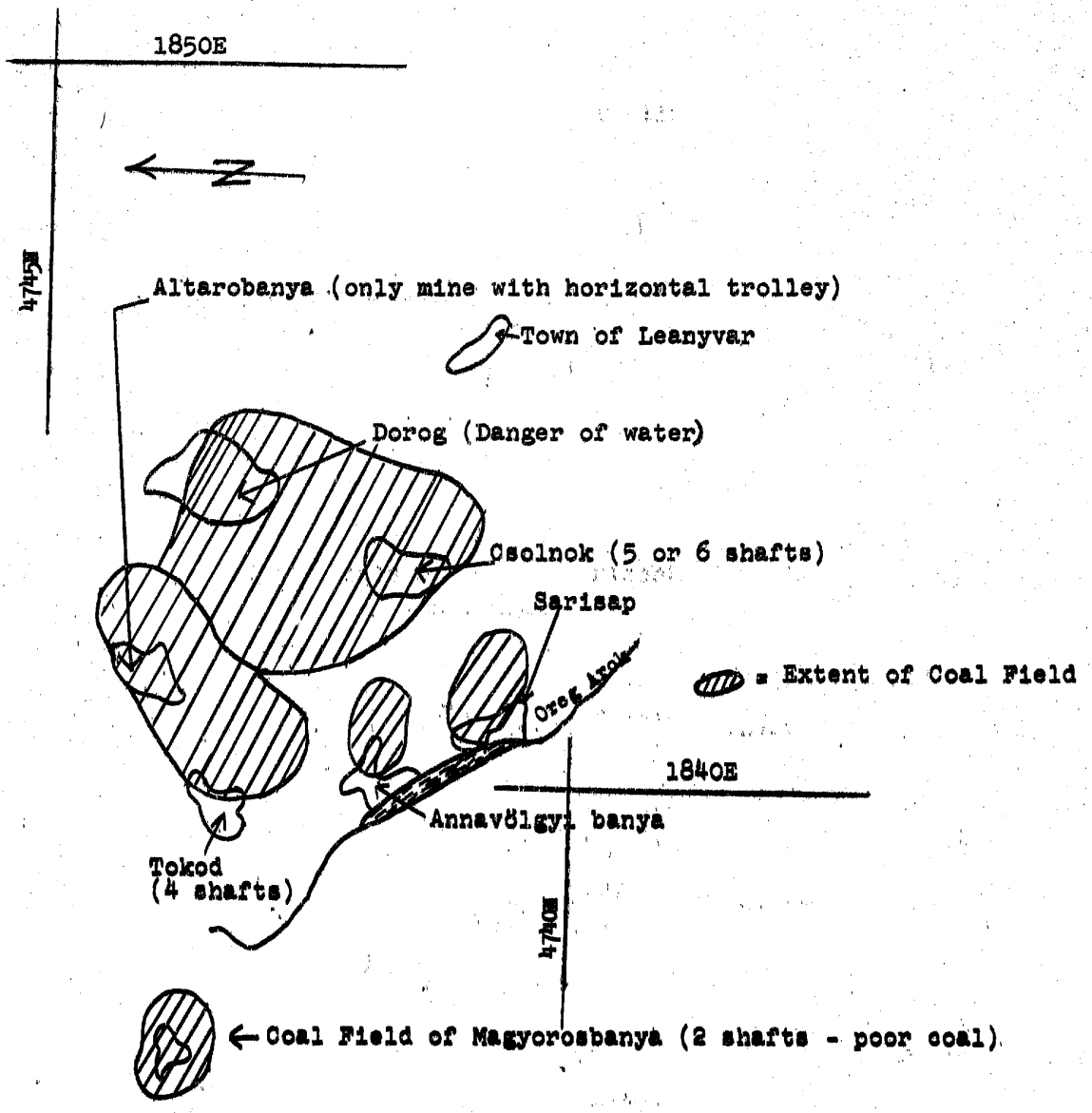

NW Transdanubia Coal Fields

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Enclosure C SECRET/SECURITY INFORMATION

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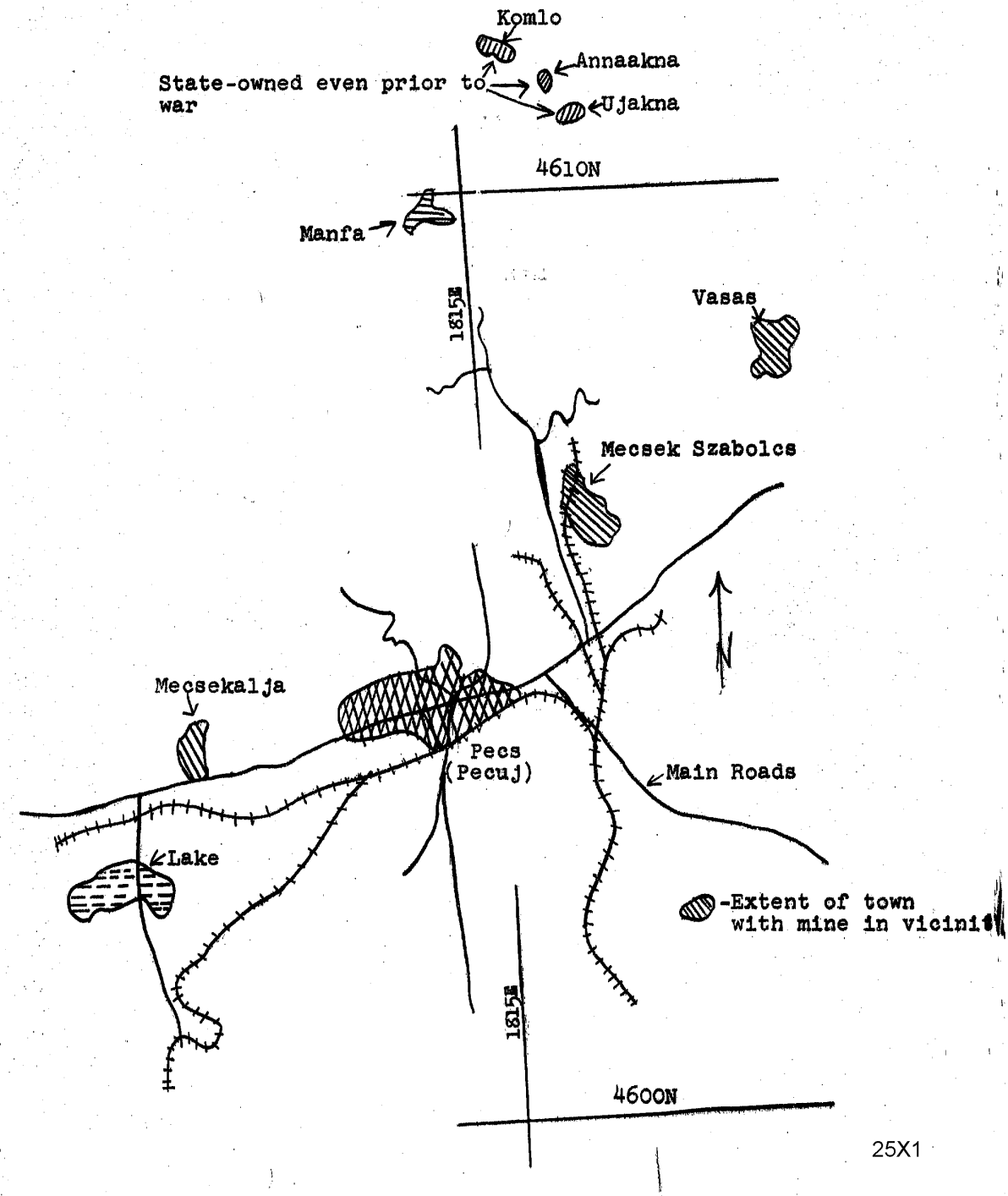

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Pecs Coal Fields

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Enclosure D SECRET/SECURITY INFORMATION

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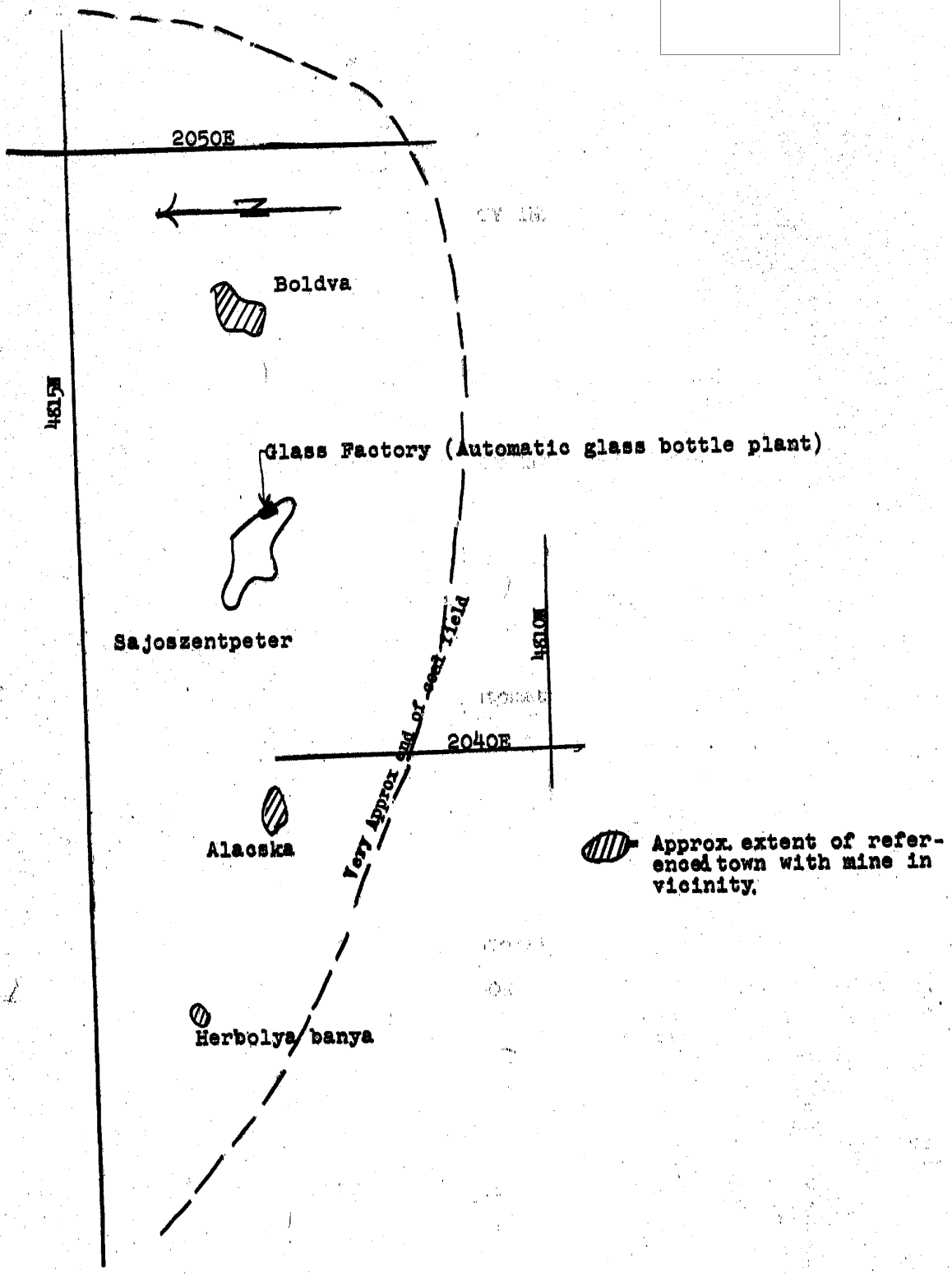

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Enclosure E SECRET/SECURITY INFORMATION

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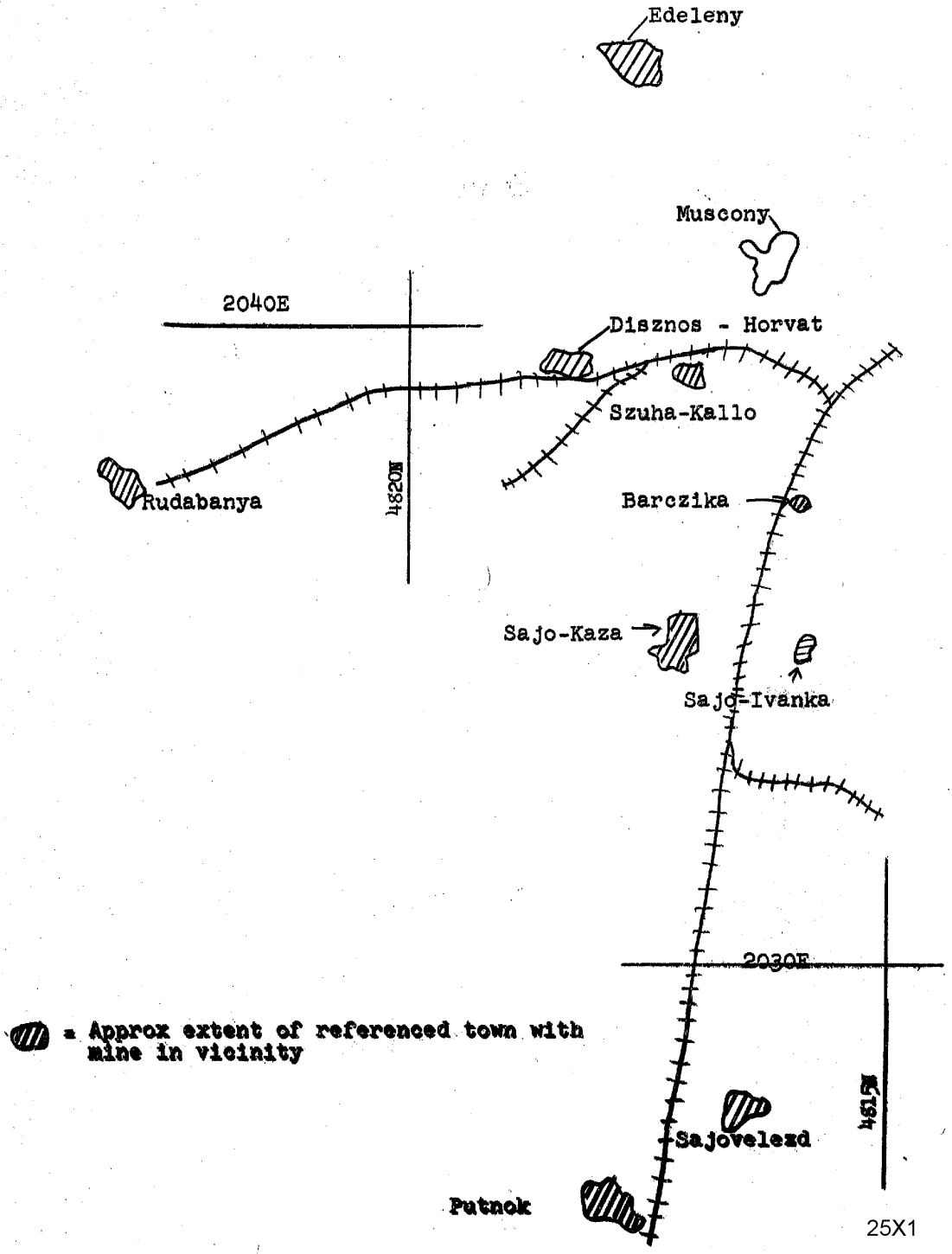

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Borsod Coal field - North

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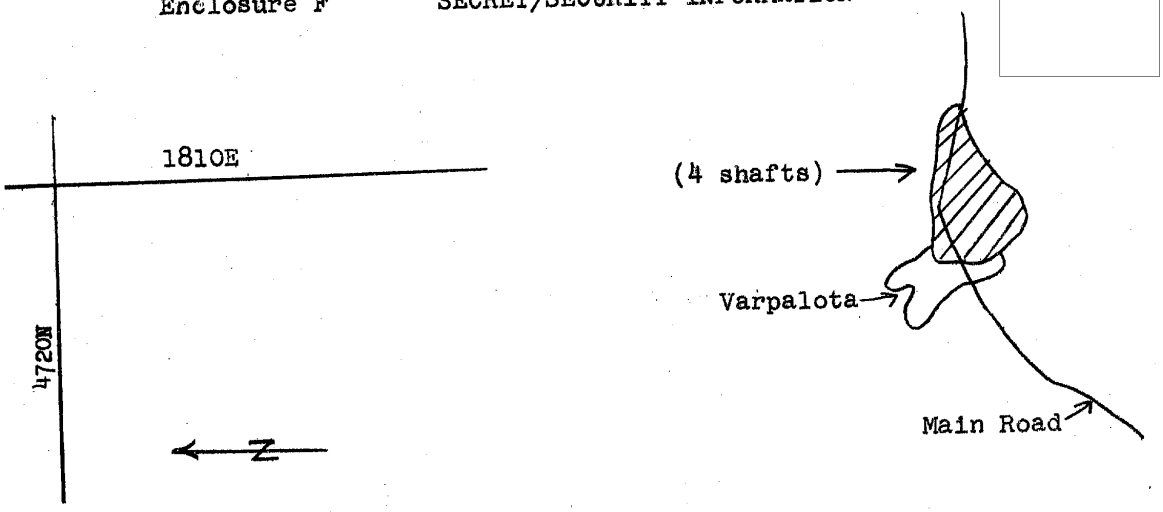
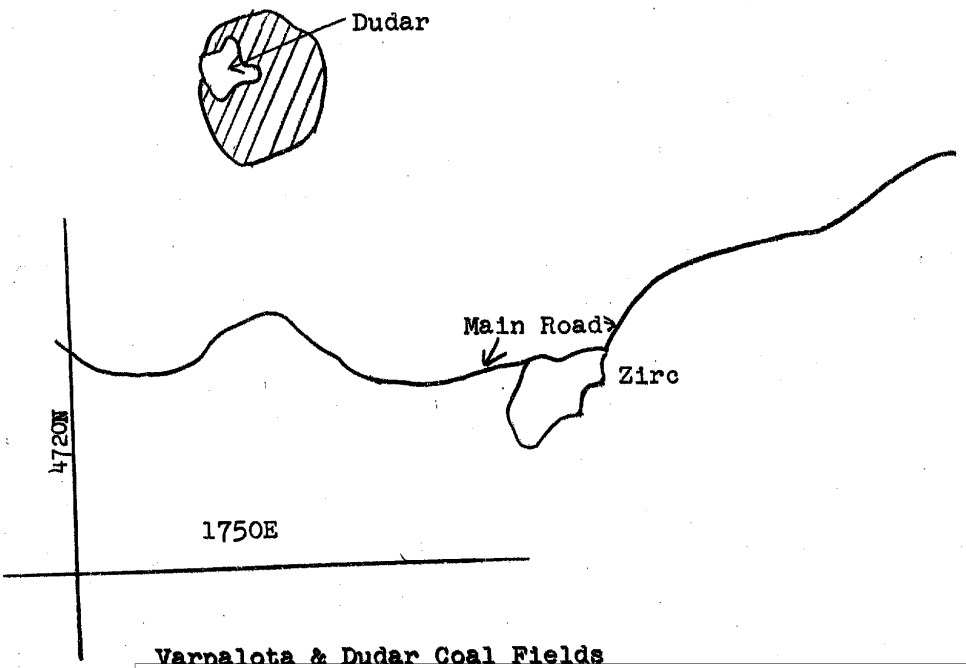
Enclosure F SECRET/SECURITY INFORMATION



= Extent of Coal Field



Varpalota & Dudar Coal Fields

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Enclosure G SECRET/SECURITY INFORMATION

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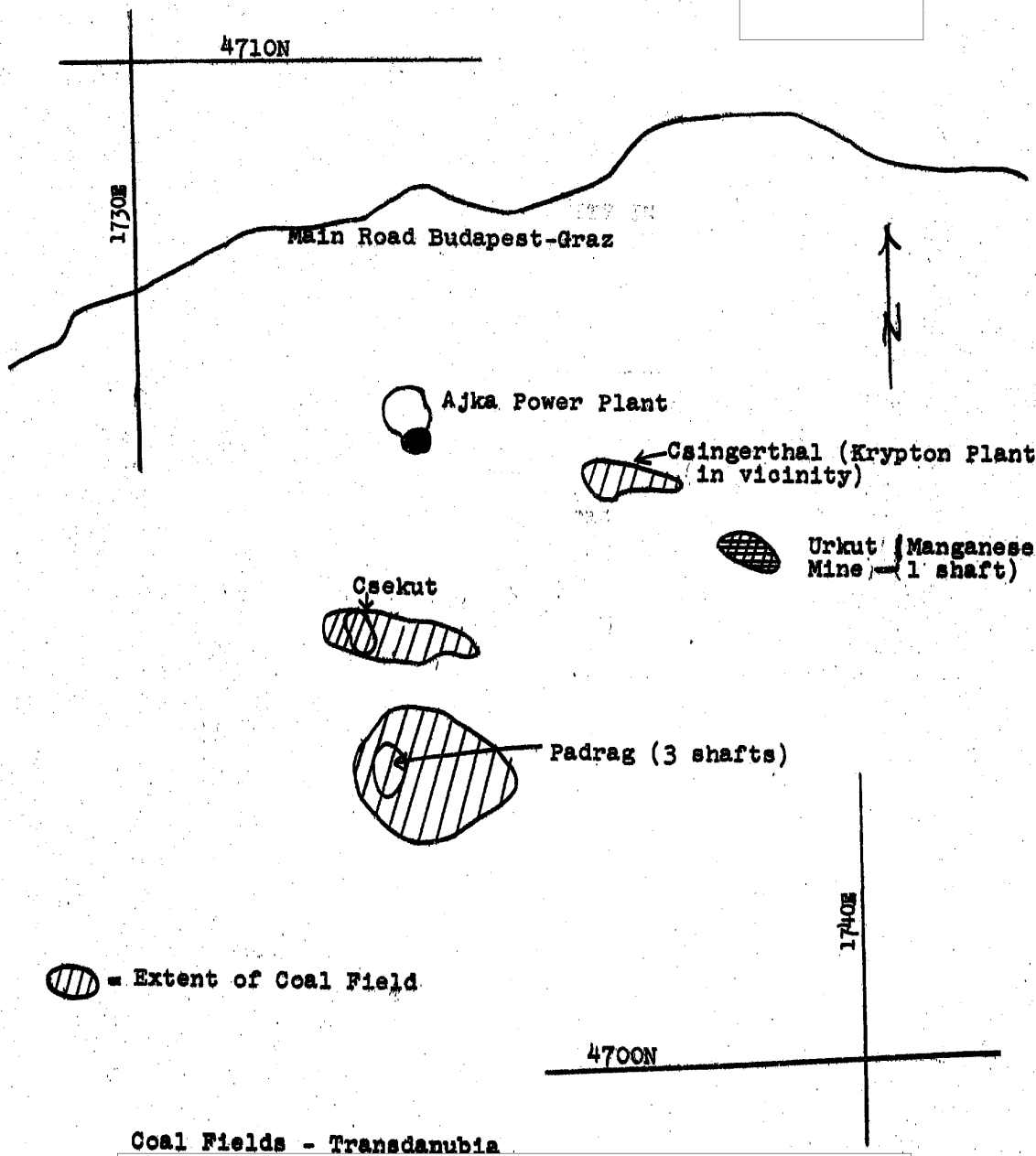

Coal Fields - Transdanubia

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Enclosure H

SECRET/SECURITY INFORMATION

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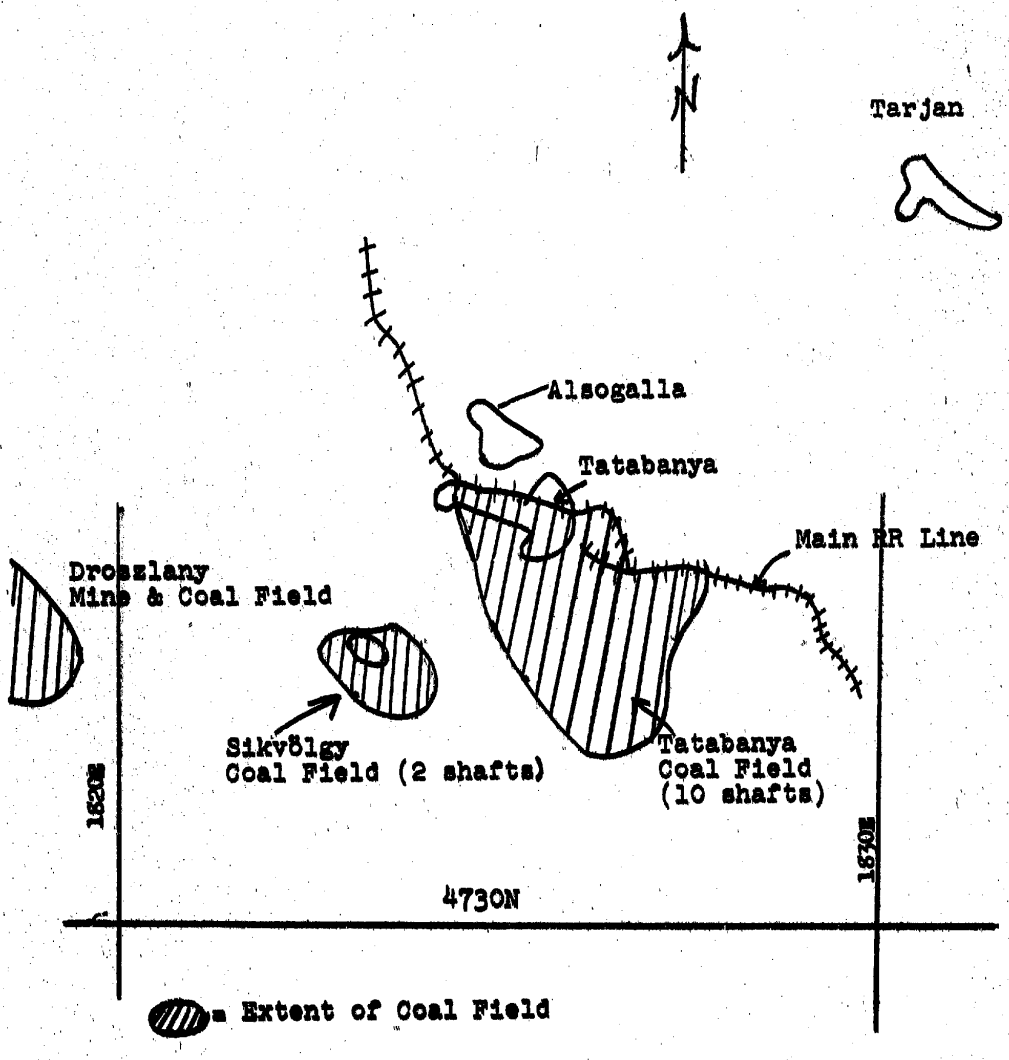

Tata Coal Fields

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Enclosure I SECRET/SECURITY INFORMATION

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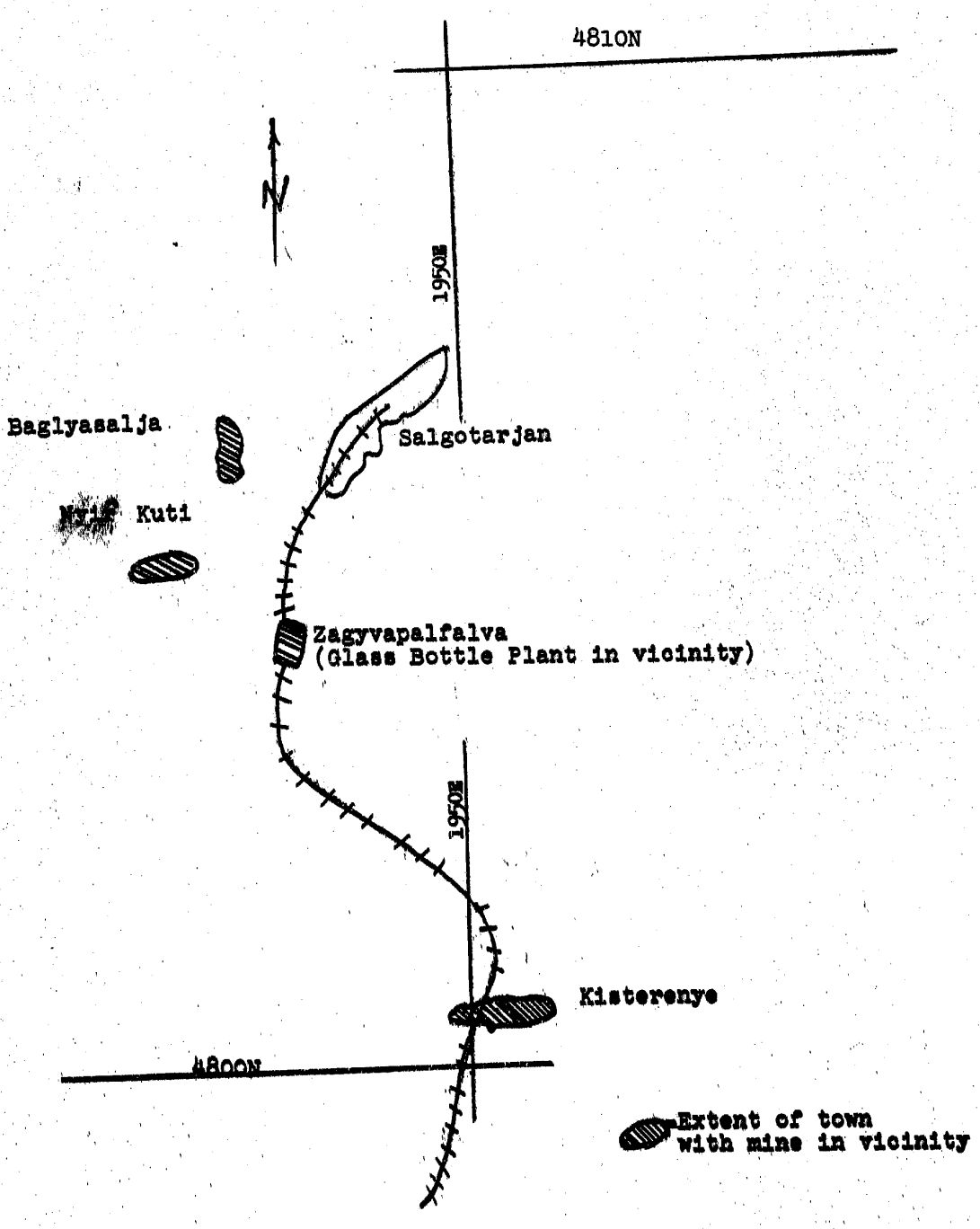

Salgotarjan Coal Fields

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Enclosure J SECRET/SECURITY INFORMATION

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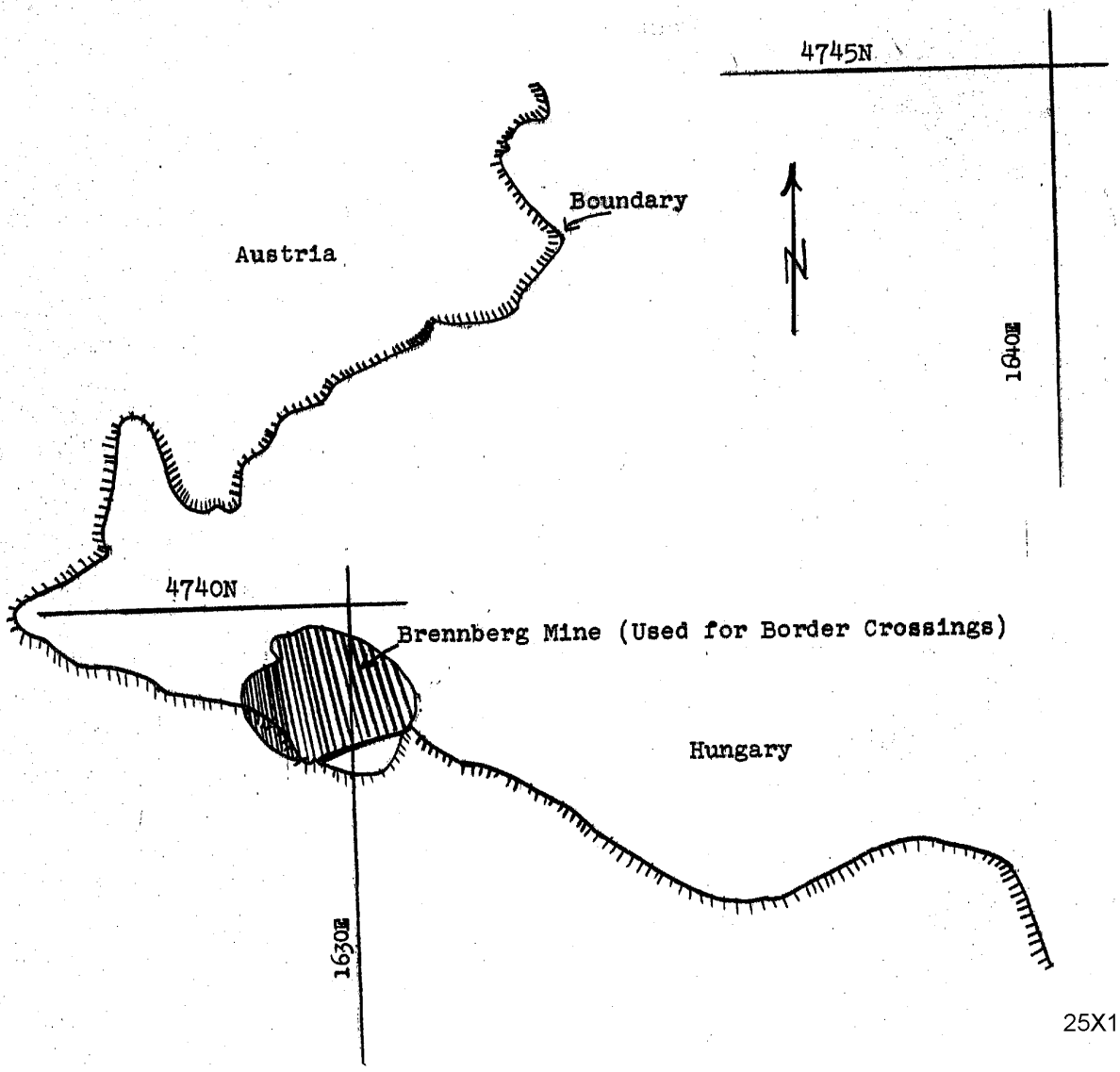

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Brennberg Coal Field

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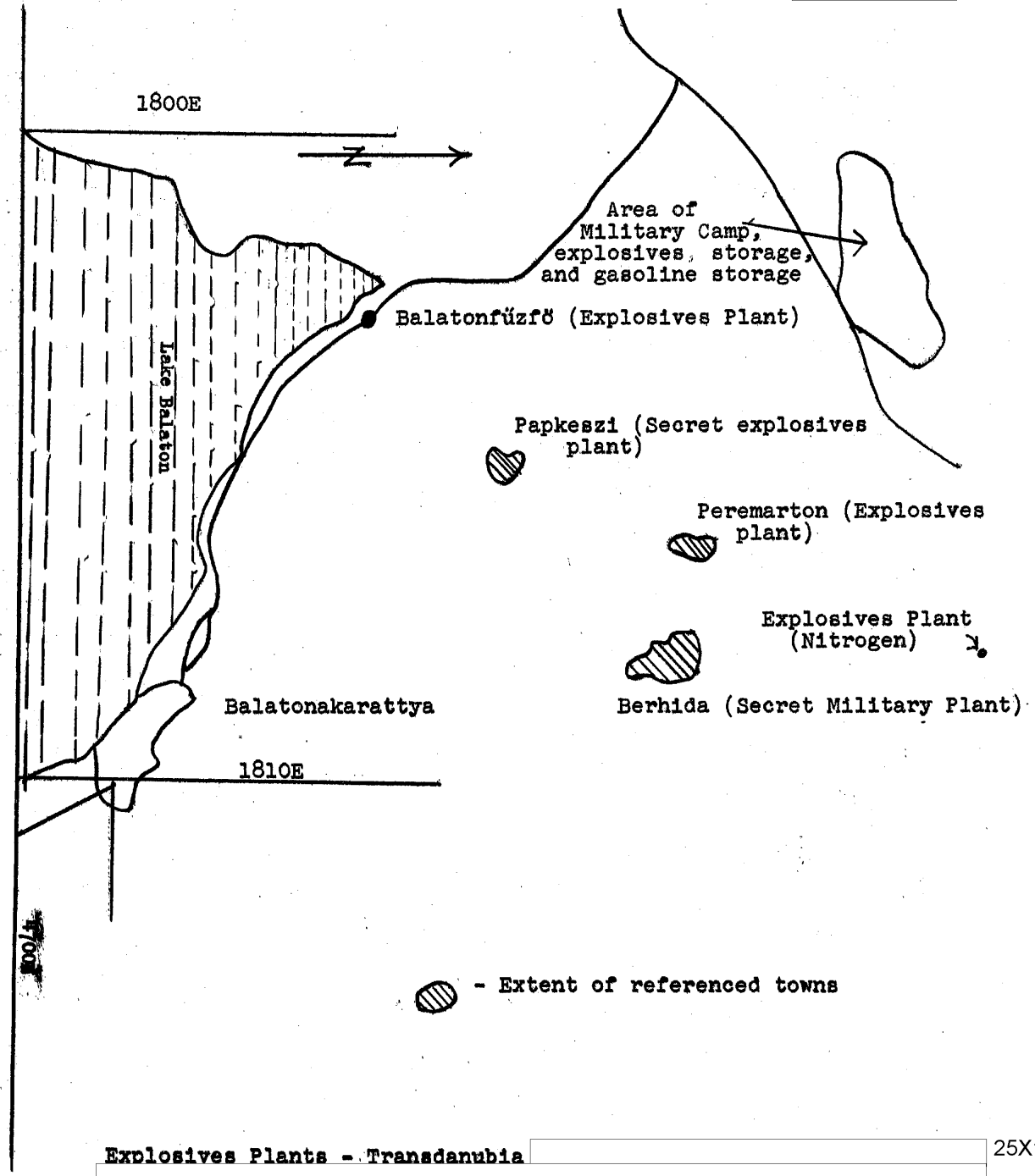

Explosives Plants - Transdanubia 25X1

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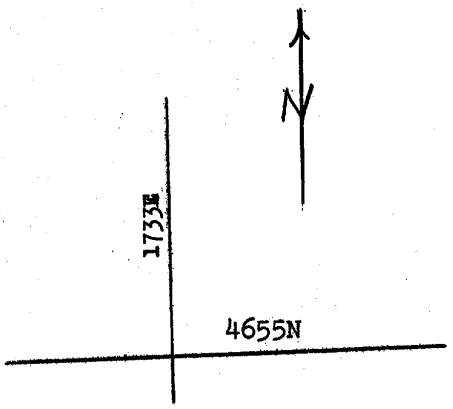

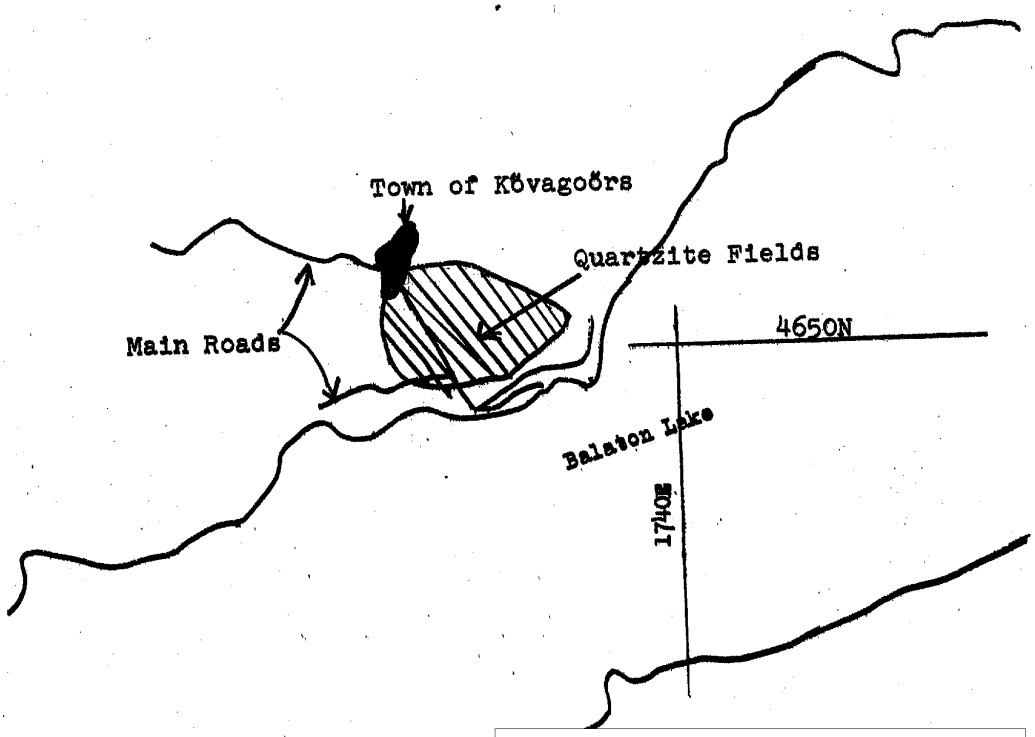

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Quartzite Fields Near Kövagoörs

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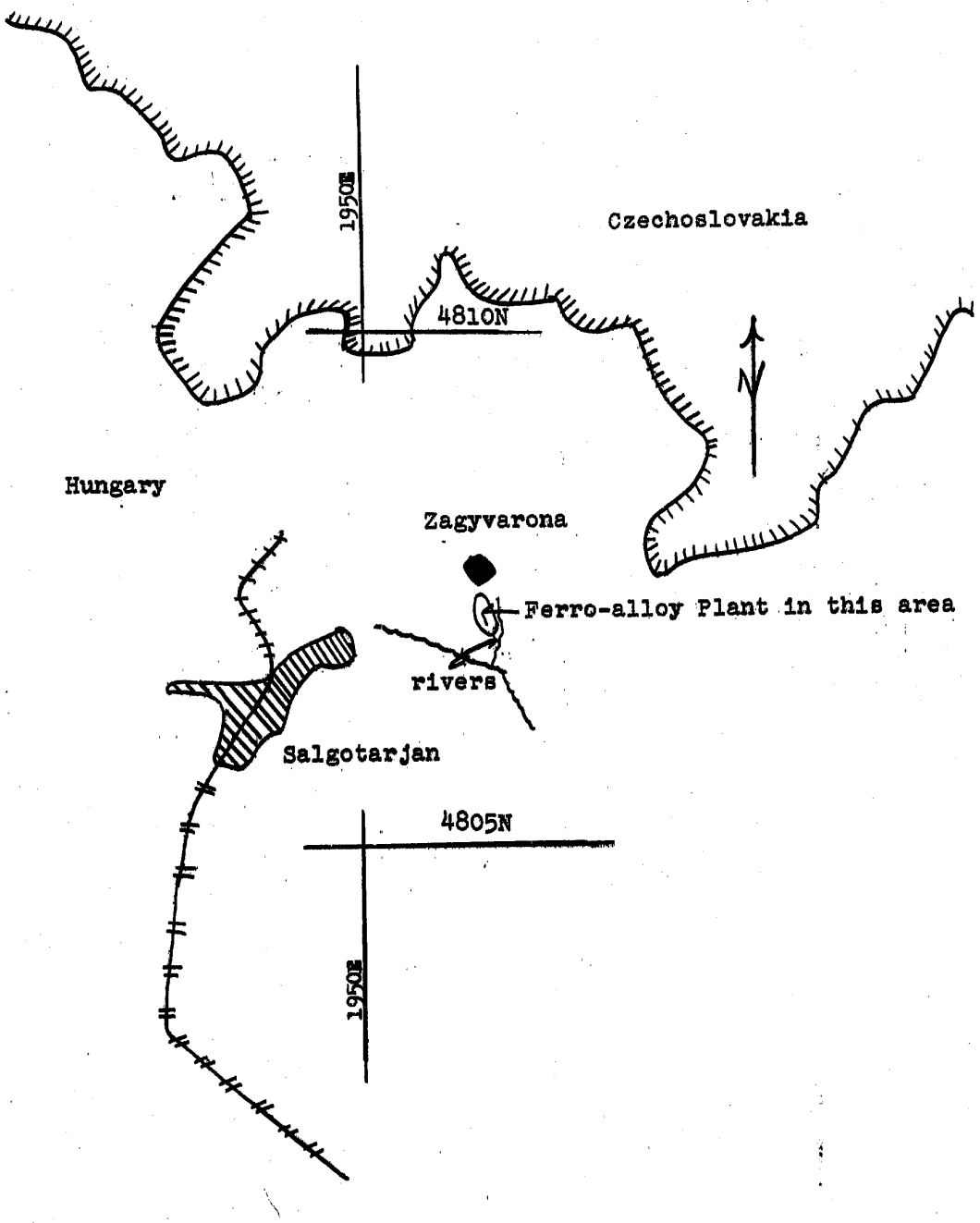
Zagyvarona Ferro-Alloy Plant -



Enclosure N

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SECURITY INFORMATION

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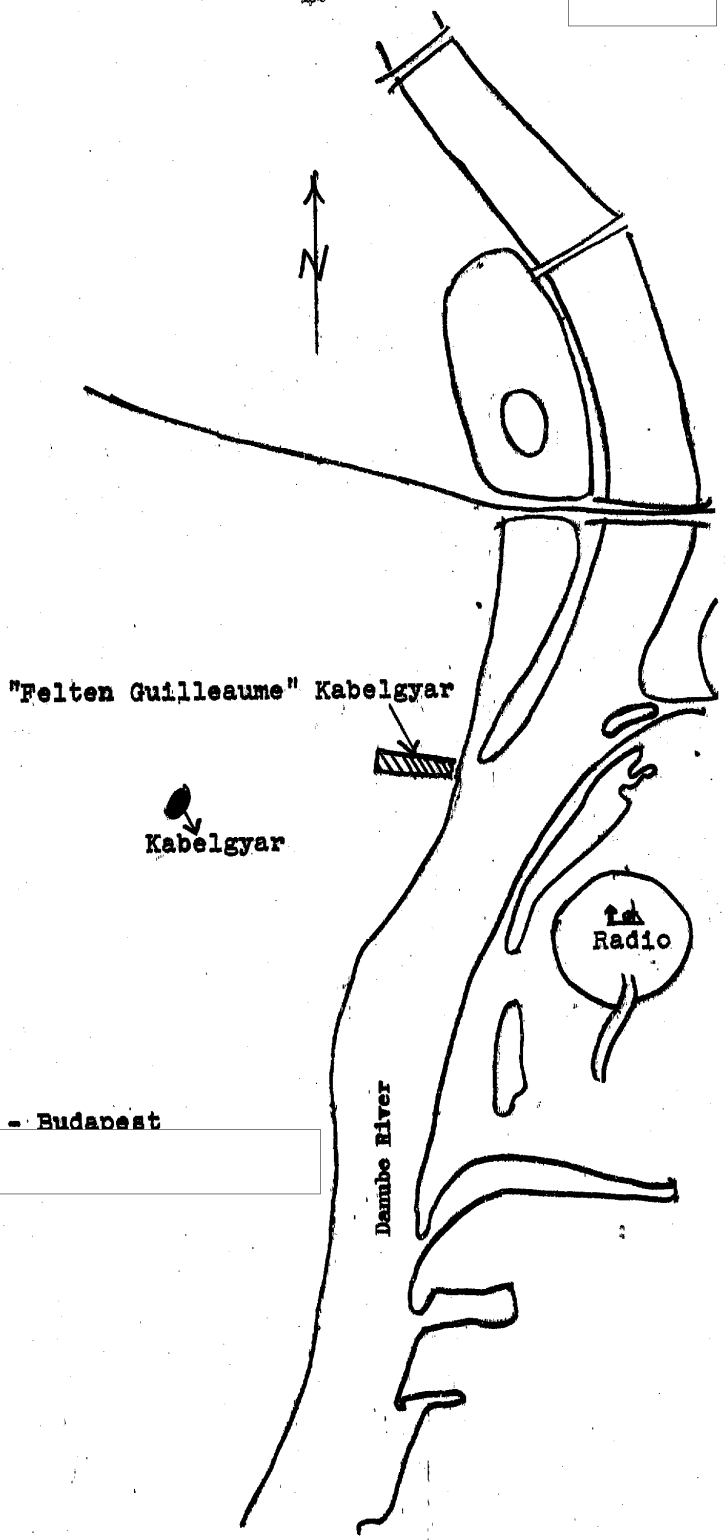

Cable Plants - Budapest

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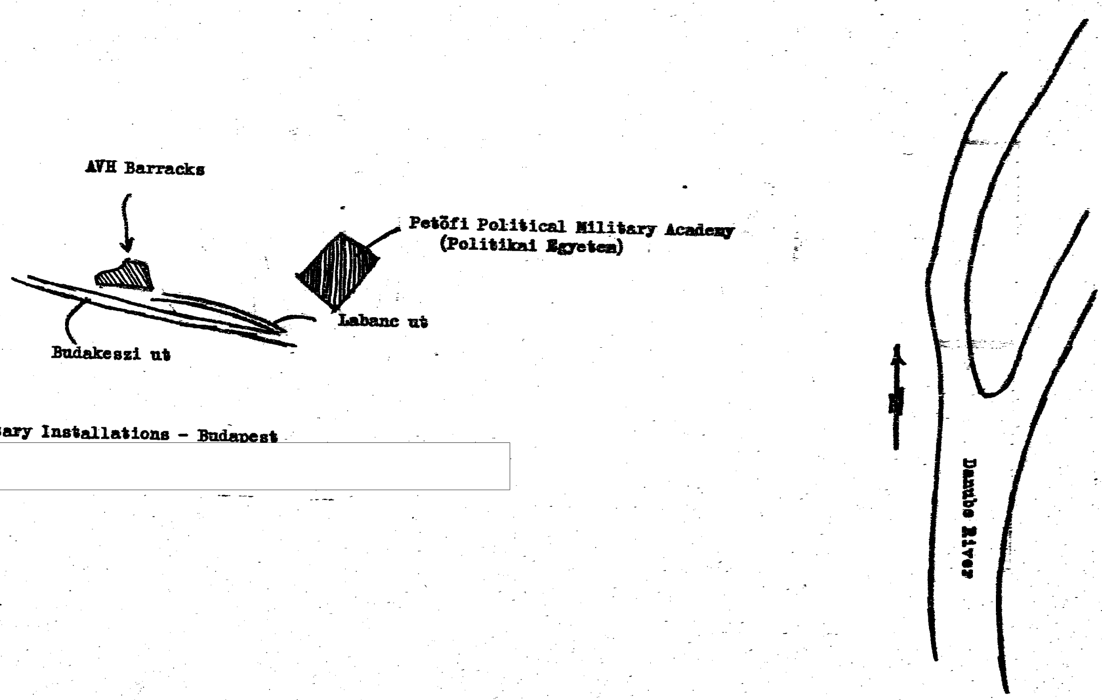

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Military Installations - Budapest

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Enclosure O

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Enclosure P

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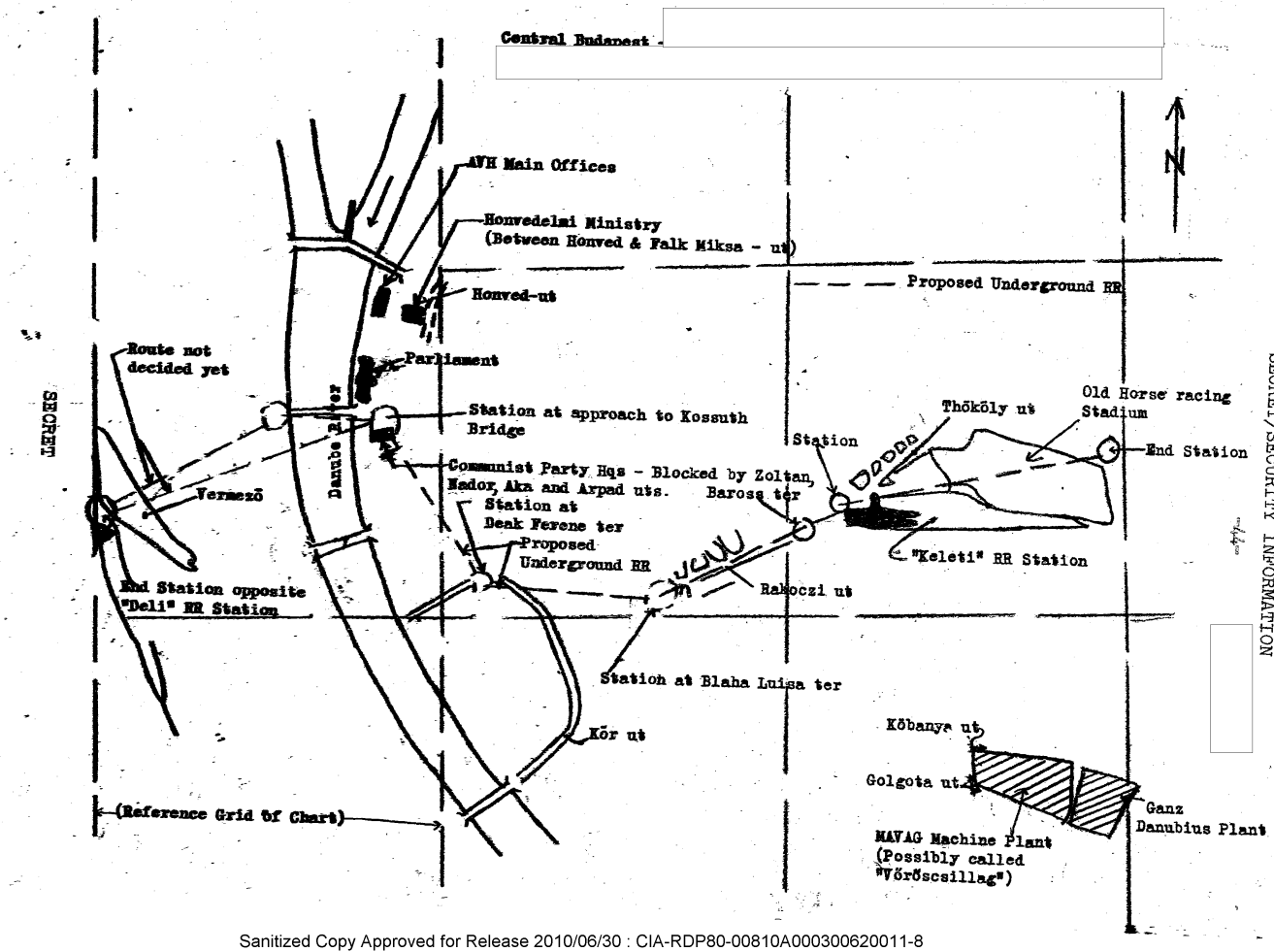

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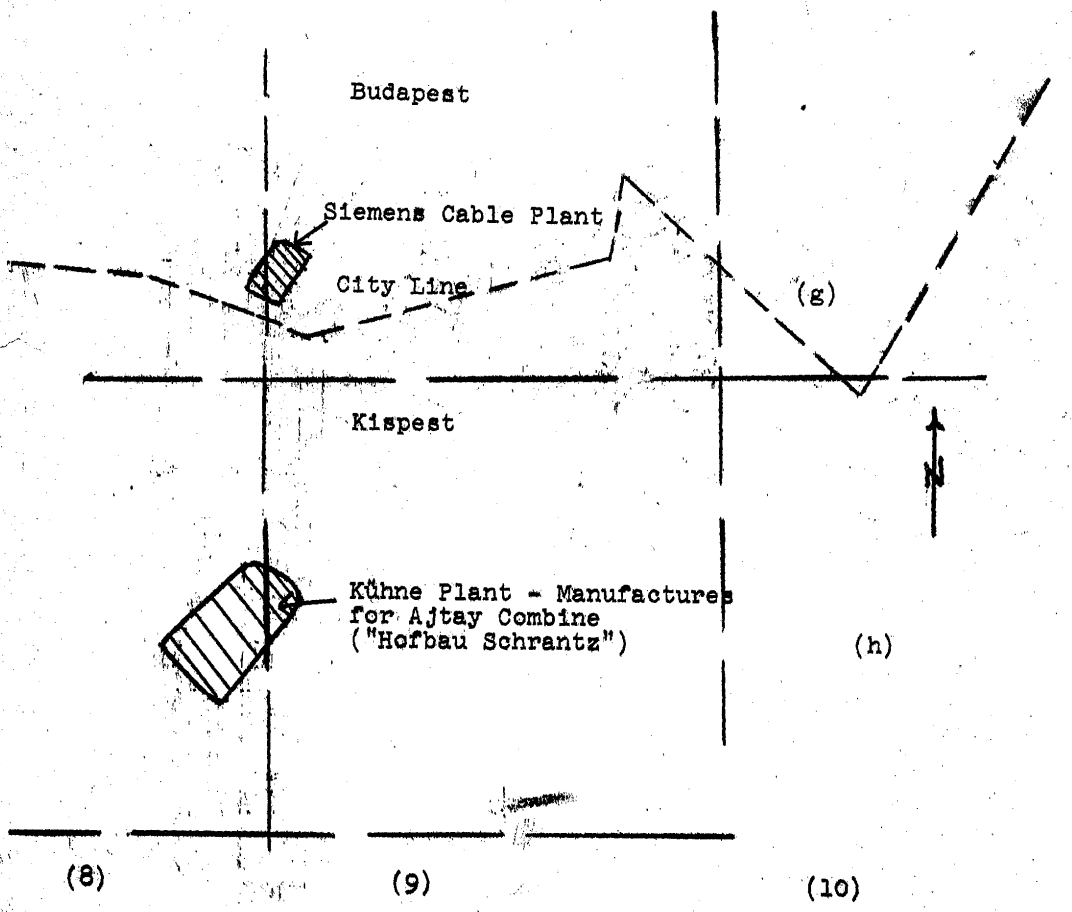

Southeast Budapest Industrial Plants

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